

36. The method of Claim 24 wherein said point source microscope is used in interference mode to increase precision in locating said optical datum or said mechanical datum or both, wherein said interference mode is created by (a) employing as said point source a coherent source of optical radiation and (b) moving a movable lens into the optical path between said detector and said beam splitter cube.

37. The method of Claim 24 further comprising capturing an image from said detector in a computer for quantitative analysis of said image.

38. The method of Claim 37 further comprising determination of distance of said point source microscope focus from an optimal focus.

39. The method of Claim 24 further comprising using phase shifting methods in interference mode to further improve precision with which said optical datums or said mechanical datums or optical performance measurements are determined.

40. The method of Claim 24 further comprising using said point source microscope in at least one of assembly, alignment, and inspection of an optical surface, an optical component, or an optical system in conjunction with said measuring apparatus.

41. The method of Claim 24 further comprising using said point source microscope as a sensor in a profilometer to measure surface shape of said sample.

42. The method of Claim 22 further comprising attaching either a collimating auxiliary lens to produce a collimated output of optical radiation or an auxiliary lens as part of said objective lens in said test arm to change the working distance, numerical aperture, or both of said point source microscope.

43. The method of Claim 42 wherein said collimated output of optical radiation permits measurement of angular alignment of said sample.

44. The method of Claim 22 further comprising using a variable intensity light source so as to permit an operator to see directly optical radiation incident that is on said sample to simplify alignment to said sample and once the return image is found, to reduce the amount of said optical radiation so that a camera detector is not saturated.

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